



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,299	12/07/2001	Tatu Ylonen	BER-026	8259
26694	7590	07/13/2007		
VENABLE LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998			EXAMINER POPHAM, JEFFREY D	
			ART UNIT	PAPER NUMBER
			2137	
			MAIL DATE	DELIVERY MODE
			07/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**MAILED**

**JUL 13 2007**

**Technology Center 2100**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/020,299  
Filing Date: December 07, 2001  
Appellant(s): YLONEN ET AL.

Jeffri Kaminski

Attorney  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/28/2007 appealing from the Office action mailed 3/28/2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6754709	GBADEGESIN	6-2004
2002/0124090	POIER	9-2002

Art Unit: 2137

"The TCP Datagram, I wanted to know and now you can too (part 2)", April 8, 2001, pp. 1-3

Ross et al., "3.3 Connectionless Transport: UDP", 2000, pp. 1-6

Cheng et al., "WTCP: an Efficient Transmission Control Protocol for Wired/Wireless Internetworking", November 11, 1999, pp. 176-185

Leech et al., "RFC 1928 - SOCKS Protocol Version 5", March, 1996, pp. 1-8

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 7, 8, 12, 14, 19-31, 33-40, 43-46, 49-55, 58-63, 66-70, 73, and 74 are rejected under 35 U.S.C. 102(e) as being anticipated by Gbadegesin (U.S. Patent 6,754,709).

Regarding Claim 1,

Gbadegesin discloses a method for handling digital data packets at a logical borderline that separates an untrusted packet-switched information network from a protected domain, comprising the steps of:

Intercepting, at a packet processor part, a packet that is in transit between the untrusted packet-switched information network and the protected domain (Column 7, lines 50-65),

Examining the packet at the packet processor part in order to determine, whether the packet contains digital data that pertains to a certain protocol (Column 7, line 66 to Column 8, line 16; and Column 8, lines 43-52),

If the packet is not found to contain digital data that would pertain to the certain protocol, processing the packet at the packet processor part (Column 7, line 50 to Column 8, line 16), and

If the packet is found to contain digital data that pertains to the certain protocol, redirecting the packet to an application gateway part (Column 7, line 66 to Column 8, line 16; and Column 8, line 53 to Column 9, line 5) and processing the packet at the application gateway part according to a set of processing rules based on obedience to the certain protocol (Column 8, lines 17-30; and Column 8, line 53 to Column 9, line 5);

Wherein the packet processor part is a kernel mode process running in a computer device (Column 7, lines 50-65) and the application

gateway part is a user mode process running in a computer device  
(Column 8, lines 17-30).

Regarding Claim 53,

Claim 53 is a system claim that corresponds to method claim 1 and  
is rejected for the same reasons.

Regarding Claim 68,

Claim 68 is a software program product that corresponds to method  
claim 1 and is rejected for the same reasons.

Regarding Claim 2,

Gbadegesin discloses, regarding a packet that is redirected from  
the packet processor part to the application gateway part:

Replacing an original value of a certain destination information field  
within the packet with a replacement value that identifies the application  
gateway part as the destination of the packet (Column 8, line 53 to  
Column 9, line 5),

Indicating from the packet processor part to the application gateway  
part the original value of the destination information field found in the  
packet at the moment of intercepting the packet at the packet processor  
part (Column 8, line 53 to Column 9, line 5) and

Using the indicated original value of the destination information field  
at the application gateway part in processing the packet (Column 8, line  
53 to Column 9, line 5).

Regarding Claim 39,

Claim 39 is a method claim that is broader than method claim 2 and is rejected for the same reasons.

Regarding Claim 43,

Claim 43 is a method claim that is broader than method claim 2 and is rejected for the same reasons.

Regarding Claim 51,

Claim 51 is a method claim that is broader than method claim 2 and is rejected for the same reasons.

Regarding Claim 54,

Claim 54 is a system claim that corresponds to method claim 2 and is rejected for the same reasons.

Regarding Claim 62,

Claim 62 is a device claim that is broader than method claim 2 and is rejected for the same reasons.

Regarding Claim 66,

Claim 66 is a device claim that is broader than method claim 2 and is rejected for the same reasons.

Regarding Claim 69,

Claim 69 is a software program product claim that is broader than method claim 2 and is rejected for the same reasons.

Regarding Claim 73,

Claim 73 is a software program product claim that is broader than method claim 2 and is rejected for the same reasons.

Regarding Claim 3,

Gbadegesin discloses replacing an original value of a certain source information field within the packet with a replacement value that identifies the packet processor part as the source of the packet (Column 6, lines 31-57),

Indicating from the packet processor part to the application gateway part the original value of the source information field found in the packet at the moment of intercepting the packet at the packet processor part (Column 9, lines 26-44) and

Using the indicated original value of the source information field at the application gateway part in processing the packet (Column 9, lines 26-44).

Regarding Claim 40,

Claim 40 is a method claim that is broader than method claim 3 and is rejected for the same reasons.

Regarding Claim 44,

Claim 44 is a method claim that is broader than method claim 3 and is rejected for the same reasons.

Regarding Claim 52,



Claim 52 is a method claim that is broader than method claim 3 and is rejected for the same reasons.

Regarding Claim 55,

Claim 55 is a system claim that corresponds to method claim 3 and is rejected for the same reasons.

Regarding Claim 63,

Claim 63 is a device claim that is broader than method claim 3 and is rejected for the same reasons.

Regarding Claim 67,

Claim 67 is a device claim that is broader than method claim 3 and is rejected for the same reasons.

Regarding Claim 70,

Claim 70 is a software program product claim that is broader than method claim 3 and is rejected for the same reasons.

Regarding Claim 74,

Claim 74 is a software program product claim that is broader than method claim 3 and is rejected for the same reasons.

Regarding Claim 7,

Gbadegesin discloses that steps of indicating the original values of certain fields comprise transmitting the original values of such fields from the packet processor part to the application gateway part separately from

the redirected packet, the certain fields including at least one of a source field and a destination field (Column 9, lines 26-44).

Regarding Claim 8,

Gbadegesin discloses, at the packet processor part:

Composing a messaging packet that conforms to a messaging protocol, and inserting the original values of the certain fields into the messaging packet together with the replacement values (Column 9, lines 26-44), and

Transmitting the messaging packet to the application gateway part (Column 9, lines 26-44); and

At the application gateway part:

Receiving the messaging packet (Column 9, lines 26-44), and

Associating the original values of the certain fields read from the messaging packet with the replacement values found in the redirected packet (Column 9, lines 26-44).

Regarding Claim 12,

Gbadegesin discloses that the step of transmitting from the application gateway part to the packet processor part a query for the original values of certain fields, so that the packet processor part only transmits the original values of the certain fields to the application gateway part as a response to the query (Column 9, lines 26-44).

Regarding Claim 14,

Gbadegesin discloses that the step of transmitting the original values of the certain fields from the packet processor part to the application gateway part running in the same computer device with the packet processor part through a communications routine that is internal to that computer device and relies on functions defined in an OS of that computer device (Column 7, line 50 to Column 8, line 30; and Column 8, line 43 to Column 9, line 5).

Regarding Claim 19,

Gbadegesin discloses that the step of redirecting the packet to the application gateway part involves only transferring the packet to a logically separate entity within the same physical device where the packet processor part resides (Column 7, line 50 to Column 8, line 30; and Column 8, line 43 to Column 9, line 5).

Regarding Claim 58,

Claim 58 is a system claim that corresponds to method claim 19 and is rejected for the same reasons.

Regarding Claim 20,

Gbadegesin discloses that the step of redirecting the packet to the application gateway part involves transferring the packet to a device that is physically separate from the device where the packet processor part resides (Column 6, lines 31-57).

Regarding Claim 59,

Claim 59 is a system claim that corresponds to method claim 20 and is rejected for the same reasons.

Regarding Claim 21,

Gbadegesin discloses, after the step of processing the packet at the application gateway part, the further steps of:

Returning the processed packet from the application gateway part to the packet processor part (Column 8, line 53 to Column 9, line 5) and

Forwarding such a returned packet from the packet processor part towards an original destination that the packet had at the moment of it becoming intercepted (Column 8, line 53 to Column 9, line 5).

Regarding Claim 22,

Gbadegesin discloses composing at the packet processor part a mapping function that associates a packet redirected to the application gateway part with an original value of a certain destination information field that the packet had at the moment of it becoming intercepted (Column 8, line 53 to Column 9, line 44) and

As a response to receiving a processed packet from the application gateway part to the packet processor part, using the mapping function to restore the original value of the destination information field in that processed packet (Column 8, line 53 to Column 9, line 44).

Regarding Claim 23,

Gbadegesin discloses that the mapping function also associates a packet redirected to the application gateway part with an original value of a certain source information field that the packet had at the moment of it becoming intercepted (Column 6, lines 31-57), and as a response to receiving a processed packet from the application gateway part to the packet processor part, the mapping function is also used to restore the original value of the source information field in that processed packet (Column 8, line 53 to Column 9, line 44).

Regarding Claim 24,

Gbadegesin discloses transmitting from the application gateway part to the packet processor part information that associates a processed packet returned from the application gateway part to the packet processor part with an original value of a certain destination information field that the processed packet had at the moment of it becoming intercepted (Column 6, lines 31-57) and

As a response to receiving a processed packet from the application gateway part to the packet processor part, using the transmitted information to restore the original value of the destination information field in that processed packet (Column 6, lines 31-57).

This is performed with the session identifiers and port numbers that are used between the packet processor part and the application gateway part.

Regarding Claim 25,

Gbadegesin discloses transmitting from the application gateway part to the packet processor part information that associates a processed packet returned from the application gateway part to the packet processor part with an original value of a certain source information field that the processed packet had at the moment of it becoming intercepted (Column 6, lines 31-57) and

As a response to receiving a processed packet from the application gateway part to the packet processor part, using the transmitted information to restore the original value of the source information field in that processed packet (Column 6, lines 31-57).

Regarding Claim 26,

Gbadegesin discloses, after the step of processing the packet at the application gateway part, the further step of:

Forwarding such a processed packet from the application gateway part towards an original destination that the packet had at the moment of becoming intercepted, without circulating the forwarded packet through the packet processor part (Column 10, lines 19-36).

Regarding Claim 27,

Gbadegesin discloses transmitting from the packet processor part to the application gateway part information that associates each packet redirected from the packet processor part to the application gateway part

with an original value of a certain destination information field that the redirected packet had at the moment of it becoming intercepted (Column 8, line 53 to Column 9, line 5) and

After a packet has been processed at the application gateway part, using the transmitted information to restore the original value of the destination information field in that packet (Column 8, line 53 to Column 9, line 5).

Regarding Claim 45,

Claim 45 is a method claim that is broader than method claim 27 and is rejected for the same reasons.

Regarding Claim 28,

Gbadegesin discloses transmitting from the packet processor part to the application gateway part information that associates each packet redirected from the packet processor part to the application gateway part with an original value of a certain source information field that the redirected packet had at the moment of it becoming intercepted (Column 6, lines 31-57; and Column 9, lines 26-44) and

After a packet has been processed at the application gateway part, using the transmitted information to restore the original value of the source information field in that packet (Column 9, lines 26-44).

Regarding Claim 46,

Claim 46 is a method claim that is broader than method claim 28 and is rejected for the same reasons.

Regarding Claim 29,

Gbadegesin discloses that the packets are handled in packet streams, all packets of an individual packet stream having the same values in certain source and destination information fields of each packet, and wherein if the first intercepted packet of a certain packet stream is found to contain digital data that pertains to the certain protocol, that packet and all subsequent packets belonging to the same packet stream are redirected to the application gateway part and processed at the application gateway part according to the set of processing rules based on obedience to the certain protocol (Column 9, line 66 to Column 10, line 36).

Regarding Claim 30,

Gbadegesin discloses, within the first packet and all subsequent packets of a certain packet stream that is found to contain digital data that pertains to the certain protocol, replacing an original value of a certain destination information field with a replacement value that identifies the application gateway part as the destination of the packets, thus enabling redirecting to the application gateway part (Column 9, line 66 to Column 10, line 36),



Indicating from the packet processor part to the application gateway part the original value of the destination information field found in the first redirected packet of a packet stream at the moment of intercepting the packet at the packet processor part (Column 8, line 53 to Column 9, line 5) and

Using the indicated original value of the destination information field at the application gateway part in processing the packets of the redirected packet stream (Column 8, line 53 to Column 9, line 5).

Regarding Claim 31,

Gbadegesin discloses, within the first packet and all subsequent packets of a certain packet stream that is found to contain digital data that pertains to the certain protocol, replacing also an original value of a certain source information field with a replacement value that identifies the packet processor part as the source of the packets (Column 6, lines 31-57; and Column 9, lines 26-44),

Indicating from the packet processor part to the application gateway part the original value of the source information field found in the first redirected packet of a packet stream at the moment of intercepting the packet at the packet processor part (Column 9, lines 26-44) and

Using the indicated original value of the source information field at the application gateway part in processing the packets of the redirected packet stream (Column 9, lines 26-44).

Regarding Claim 33,

Gbadegesin discloses that the packets of an individual packet stream belong to an individual TCP connection (Column 7, lines 28-36).

Regarding Claim 34,

Gbadegesin discloses, between the steps of redirecting the packet to the application gateway part and processing the packet at the application gateway part, a step of removing from the redirected packet any traces of it having been redirected, so that the application gateway part processes the packet as if it had received the packet for processing immediately after the packet was intercepted (Column 8, line 43 to Column 9, line 5).

Regarding Claim 35,

Gbadegesin discloses, after the step of processing the packet at the application gateway part, the steps of:

Re-inserting into the processed packet the redirection information that was removed from the packet before processing the packet at the application gateway part, so that after the re-inserting the packet contains values that identify the application gateway part as the source and the packet processor part as the destination of the packet (Column 8, line 43 to Column 9, line 5),

Returning the processed packet from the application gateway part to the packet processor part (Column 8, line 43 to Column 9, line 5) and

Forwarding such a returned packet from the packet processor part towards an original destination that the packet had at the moment of it becoming intercepted (Column 8, line 43 to Column 9, line 5).

Regarding Claim 36,

Gbadegesin discloses, after a certain packet has been redirected from the packet processor part, dynamically establishing a new instruction for the packet processor part regarding the redirecting of subsequently arriving packets that have a certain relationship to the packet that was redirected from the packet processor part to the application gateway part (Column 6, line 58 to Column 7, line 2).

Regarding Claim 37,

Gbadegesin discloses detecting at the application gateway part that a packet that was redirected from the packet processor part to the application gateway part contains data that pertains to a certain control channel defined in a protocol that also defines a data channel associated with the control channel (Column 6, line 58 to Column 7, line 2; and Column 10, lines 37-55),

Establishing a new instruction for the packet processor to redirect to the application gateway part subsequently arriving packets that contain data that pertains to the data channel (Column 6, line 58 to Column 7, line 2), and

Communicating the established new instruction from the application gateway part to the packet processor part (Column 6, line 58 to Column 7, line 2).

Regarding Claim 38,

Gbadegesin discloses detecting that a packet that was redirected from the packet processor part to the application gateway part is associated with a certain first port number and contains data that pertains to a certain protocol that defines that also a certain second port number should be reserved to that certain protocol (Column 8, line 43 to Column 9, line 5), and

Establishing a new instruction for the packet processor part to redirect to the application gateway part subsequently arriving packets that are associated with the second port number (Column 6, line 58 to Column 7, line 2).

Regarding Claim 49,

Gbadegesin discloses that the step of examining the packet in order to determine whether the packet contains digital data that pertains to a certain protocol involves handling the packet according to a set of packet filtering rules (Column 6, lines 31-57).

Regarding Claim 50,

Gbadegesin discloses that the step of examining the packet in order to determine whether the packet contains digital data that pertains to

a certain protocol involves checking whether the packet belongs to a connection or flow all packets of which should be redirected to the application gateway part (Column 6, lines 31-57).

Regarding Claim 60,

Gbadegesin discloses that the second computer is arranged to run several application gateway parts as simultaneously or alternately active user mode processes (Column 6, line 58 to Column 7, line 2).

Regarding Claim 61,

Gbadegesin discloses several second computer devices, each of which has a communications connection with the first computer device and each of which is arranged to run at least one application gateway part as a user mode process (Column 4, lines 45-64).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 15-17, 41, 42, 47, 48, 56, 57, 64, 65, 71, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Poier (U.S. Patent Application Publication 2002/0124090).

Regarding Claim 4,

Gbadegesin does not disclose that steps of indicating the original values of certain fields comprise transmitting the original values of such fields from the packet processor part to the application gateway part together with the redirected packet, the certain fields including at least one of a source field and a destination field.

Poier, however, discloses that steps of indicating the original values of certain fields comprise transmitting the original values of such fields from the packet processor part to the application gateway part together with the redirected packet, the certain fields including at least one of a source field and a destination field (Page 3, Paragraph 22). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the VPN of Poier into the NAT/application gateway of Gbadegesin in order to allow the NAT and application gateway to deal with encrypted packets that are part of a VPN connection.

Regarding Claim 15,

Gbadegesin discloses, regarding a packet that is redirected from the packet processor part to the application gateway part:

Using the original value of a destination information field in the packet at the application gateway part in processing the packet (Column 8, line 53 to Column 9, line 5), but does not disclose prepending a header to the packet at the packet processor part, the prepended header containing a value that identifies the application gateway part as the

destination of the packet and stripping the header from the packet at the application gateway part.

Poier, however, discloses prepending a header to the packet at the packet processor part, the prepended header containing a value that identifies the application gateway part as the destination of the packet (Page 3, Paragraph 22), and stripping the header from the packet at the application gateway part (Page 3, Paragraph 22). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the VPN of Poier into the NAT/application gateway of Gbadegesin in order to allow the NAT and application gateway to deal with encrypted packets that are part of a VPN connection.

Regarding Claim 41,

Claim 41 is a method claim that is broader than method claim 15 and is rejected for the same reasons.

Regarding Claim 47,

Claim 47 is a method claim that is broader than method claim 15 and is rejected for the same reasons.

Regarding Claim 56,

Claim 56 is a system claim that corresponds to method claim 15 and is rejected for the same reasons.

Regarding Claim 64,

Claim 64 is a device claim that is broader than method claim 15  
and is rejected for the same reasons.

Regarding Claim 71,

Claim 71 is a software program product claim that is broader than  
method claim 15 and is rejected for the same reasons.

Regarding Claim 16,

Gbadegesin as modified by Poier disclose the method of claim 15,  
in addition, Poier discloses that the prepended header also contains a  
value that identifies the packet processor part as the source of the packet  
(Page 3, Paragraph 22).

Regarding Claim 42,

Claim 42 is a method claim that is broader than method claim 16  
and is rejected for the same reasons.

Regarding claim 48,

Claim 48 is a method claim that is broader than method claim 16  
and is rejected for the same reasons.

Regarding Claim 57,

Claim 57 is a system claim that corresponds to method claim 16  
and is rejected for the same reasons.

Regarding Claim 65,

Claim 65 is a device claim that corresponds to method claim 16 and  
is rejected for the same reasons.



Regarding Claim 72,

Claim 72 is a software program product claim that is broader than method claim 16 and is rejected for the same reasons.

Regarding Claim 17,

Gbadegesin does not disclose enveloping the original packet to be redirected from the packet processor part to the application gateway part into an enveloping packet and extracting the original packet from the enveloping packet.

Poier, however, discloses, at the packet processor part:

Enveloping an original packet to be redirected from the packet processor part to the application gateway part into an enveloping packet (Page 3, Paragraph 22; and Figure 7); and

At the application gateway part:

Extracting the original packet from the enveloping packet (Page 3, Paragraph 22; and Figure 7).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the VPN of Poier into the NAT/application gateway of Gbadegesin in order to allow the NAT and application gateway to deal with encrypted packets that are part of a VPN connection.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Poier, further in view of TCP ("The TCP Datagram, I wanted to know and now you can too (part 2)", 4/8/2001, pp. 1-3, obtained from <http://web.archive.org/web/20010408184021/http://www.daemon.org/tcp.html>).

Regarding Claim 5,

Gbadegesin as modified by Poier disclose the method of claim 4, and further, at the packet processor part:

Setting the value of a certain bit in the packet to indicate the presence of urgent information within the packet (Gbadegesin: Column 9, lines 6-25),

Inserting the original values of the certain fields into the packet immediately before the location pointed at by the pointer value (Poier: Page 3, Paragraph 22); and

At the application gateway part:

Reading the original values of the certain fields from the location in the packet pointed at by the pointer value (Poier: Page 3, Paragraph 22);

But do not explicitly disclose inserting into a pointer field in the packet a pointer value that points at the end of urgent information within the packet.

TCP, however, discloses inserting into a pointer field in the packet a pointer value that points at the end of urgent information within the packet (Pages 1-2). It would have been obvious to one of ordinary skill in

the art at the time of applicant's invention to incorporate the datagram of TCP into the NAT/application gateway of Gbadegesin as modified by Poier because TCP is already used within the combination. The reference is solely needed as evidence of what fields are within TCP.

Regarding Claim 6,

Gbadegesin as modified by Poier disclose the method of claim 4, and further, at the packet processor part:

Using the TCP protocol (Gbadegesin: Column 9, lines 6-25),  
Inserting the original values of the certain fields into the packet  
(Poier: Page 3, Paragraph 22); and

At the application gateway part:

Reading the original values of the certain fields from the packet  
(Poier: Page 3, Paragraph 22).

Setting the value of an options field in the packet to indicate the presence of optional information within the packet (Pages 2-3). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the datagram of TCP into the NAT/application gateway of Gbadegesin as modified by Poier because TCP is already used within the combination. The reference is solely needed as evidence of what fields are within TCP.

Claims 9, 10, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of UDP (Ross et al., "3.3 Connectionless Transport: UDP", 2000, pp. 1-6, obtained from <http://www-net.cs.umass.edu/kurose/transport/UDP.html>).

Regarding Claim 9,

Gbadegesin does not disclose that the messaging packet is a UDP packet.

UDP, however, discloses that the messaging packet is a UDP packet (Pages 1-5). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the protocol of UDP into the NAT/application gateway of Gbadegesin in order to provide a fast protocol that can be used for sending information without requiring setup and maintenance of a connection.

Regarding Claim 10,

Gbadegesin does not disclose that the step of transmitting the messaging packet to the application gateway part is performed more than once in order to transmit several redundant copies of the messaging packet to the application gateway part.

UDP, however, discloses that the step of transmitting the messaging packet to the application gateway part is performed more than once in order to transmit several redundant copies of the messaging packet to the application gateway part (Page 1). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention

to incorporate the protocol of UDP into the NAT/application gateway of Gbadegesin in order to provide a fast protocol that can be used for sending information without requiring setup and maintenance of a connection.

Regarding Claim 32,

Gbadegesin does not disclose that the step of indicating from the packet processor part to the application gateway part the original values of certain information fields comprises at least one repetition in order to transmit redundant indications from the packet processor part to the application gateway part.

UDP, however, discloses that the step of indicating from the packet processor part to the application gateway part the original values of certain information fields comprises at least one repetition in order to transmit redundant indications from the packet processor part to the application gateway part (Page 1). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the protocol of UDP into the NAT/application gateway of Gbadegesin in order to provide a fast protocol that can be used for sending information without requiring setup and maintenance of a connection.

Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Cheng (Cheng et al., "WTCP: an Efficient Transmission

Art Unit: 2137

Control Protocol for Wired/Wireless Internetworking", 11/11/1999, pp. 176-185, obtained from <http://nr.stic.gov.tw/ejournal/ProceedingA/v24n3/176-185.pdf>).

Regarding Claim 11,

Gbadegesin does not disclose that the sender transmits the packet to the receiver spontaneously.

Cheng, however, discloses that the sender transmits the packet to the receiver spontaneously (Page 177, Section 1). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the transmission control protocol of Cheng into the NAT/application gateway of Gbadegesin in order to allow the system to deal with dropped packets and dynamically change its setup so that less packets will be dropped during the session.

Regarding Claim 13,

Gbadegesin discloses that the application gateway part (receiver) transmits to the packet processor part (sender) a query for the original values of the certain fields, so that the packet processor part also transmits the original values of the certain fields to the application gateway part as a response to the query (Column 9, lines 26-44), but does not disclose that the sender transmits the packet to the receiver spontaneously, and if the receiver has not received such spontaneously transmitted packet within a certain time limit, the sender re-sends the packet to the receiver.

Cheng, however, discloses that the sender transmits the packet to the receiver spontaneously, and if the receiver has not received such spontaneously transmitted packet within a certain time limit, the sender re-sends the packet to the receiver (Page 177, Section 1). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the transmission control protocol of Cheng into the NAT/application gateway of Gbadegesin in order to allow the system to deal with dropped packets and dynamically change its setup so that less packets will be dropped during the session.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Poier, further in view of Leech (Leech et al., "RFC 1928 – SOCKS Protocol Version 5", 3/1996, pp. 1-8, obtained from <http://www.faqs.org/rfcs/rfc1928.html>).

Gbadegesin as modified by Poier does not disclose a packet according to the SOCKS protocol.

Leech, however, discloses a packet according to the SOCKS protocol (Pages 1-8). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the SOCKS protocol of Leech into the NAT/application gateway of Gbadegesin as modified by Poier in order to provide authentication of the NAT to the application gateway, thus making the system more secure.

**(10) Response to Argument**

A. Response to arguments regarding claims 1-3, 7, 8, 12, 14, 19-31, 33-40, 43-46, 49-55, 58-63, 66-70, 73, and 74, rejected under 35 U.S.C. 102(e) as being anticipated by Gbadegesin:

Appellant argues that Gbadegesin does not disclose examining data within the packet. As Appellant's arguments and the discussion thereof show, this is not claimed. What is claimed is examining the packet in order to determine whether the packet contains digital data that pertains to a certain protocol.

Appellant provides an analogy (Page 11, final paragraph, and Page 14, second paragraph) that a box is analogous to a packet and the contents of the box are analogous to data within the packet. By Appellant's definition of the box itself being a packet and the contents of the box being data within the packet, one can see that the claims correlate to examining the box itself (examining the packet). Appellant describes that the box can be examined or observed to determine if it has a certain color, is sealed in a particular manner, includes an address label etc. and that the contents of the box (data in the packet) can be examined to determine if the contents have certain characteristics. As can be seen from such an analogy, examining the packet (claimed) is different than examining the payload data in the packet (argued). If the claims were intended to be as narrow as to examine the payload data of the packet, they would state as much. Of course, examining the packet could include examining the payload data



within the packet, but such examining of the packet is not limited to such an interpretation.

Any examination of any data of the packet that tells the system that the packet contains digital data pertaining to a certain protocol may be used in order to decide how to handle that packet. This could come in the form of an address and/or port that shows where the packet is being sent and/or what port the packet is being sent to. It could come in the form of a simple header that states the protocol, a flag that is set, or by an address that explicitly states what protocol is being used (e.g. ftp://<ftpaddress>).

These are merely examples of possible ways to examine a packet in order to determine whether the packet contains digital data related to a certain protocol, and none of them require examining the actual payload. There are many ways that an entity can examine the packet to determine whether the packet contains digital data pertaining to a certain protocol without the need to examine the payload data in order to determine such. The data within Gbadegesin that pertains to the certain protocol is clearly digital data since the data can be stored on a computing device and operations can be performed thereon (e.g. adding value to the data as shown in Column 2, lines 13-17 and Column 8, lines 16-30).

Appellant also argues that the examiner argues that the port-redirect command of Gbadegesin is equivalent to the certain protocol of the claims. While the section referred to by the examiner does discuss a port-redirect command, it is noted that the examiner never argued that such a command is equivalent to a protocol. What is commanded of the gateway/gNAT may be pertinent to a certain protocol, however.

Column 8, line 16 to Column 9, line 5 shows such commanding of the gateway/gNAT by the transparent proxy. First, a proxy may determine that all HTTP traffic should be sent from the gateway to the proxy: "a process might act as a transparent proxy for HTTP sessions" (Column 8, lines 31-32). The proxy then commands the gateway/gNAT to forward all HTTP traffic to the proxy: "The port-redirect command tells the API library to instruct the network gateway that all sessions destined for TCP port number 80 must be directed instead to the transparent proxy's socket" (Column 8, lines 43-46). At this point, the proxy has commanded the gateway/gNAT to send all HTTP sessions to the proxy. Now, the gateway/gNAT will act on such a command for packets that are sent to it. The gateway/gNAT determines whether a packet contains digital data that pertains to the certain protocol, based on the commanded redirect: "The network gateway determines that the client's connection-request matches the transparent proxy's commanded redirect, and it triggers the kernel-mode network address translation module" (Column 8, lines 48-52). Finally, the gateway/gNAT performs such forwarding: "The network gateway forwards the client's connection-request, which is now destined to the transparent proxy instead of the Internet server to which the request was originally sent" (Column 8, lines 57-60). Quite clear from this section is the gateway/gNAT examining a packet in order to determine whether the packet contains digital data pertaining to HTTP, and forwarding such data pertaining to HTTP to the transparent proxy. How the protocol is determined to be the certain protocol is unimportant to the claimed invention. The protocol could be selected and/or changed dynamically as the system runs, assigned by an administrator, predetermined to be

Art Unit: 2137

static for all connections, specific to a particular device (such as watching for one protocol when data is destined for server1 and another protocol when data is destined for server2). The certain protocol could be specified by the application gateway part in order to inform the packet processor part to redirect all data pertaining to said protocol to the application gateway part. The certain protocol could clearly be defined by use of the above described port-redirect command.

Column 7, lines 63-65 shows that "all packets will be observed by the kernel-mode translation module 106 before being sent, received, or forwarded." The gateway/gNAT observes every packet in order to determine whether the packet should be forwarded to the transparent proxy or to the intended destination. While the word "examine" may not be used, this observing is equivalent to examining, since the packet must be checked in order to determine whether to transmit the packet to the transparent proxy or not.

Appellant argues that Gbadegesin determines whether a packet relates to a recognized or unrecognized session. While Gbadegesin does include additional functionality, such as redirecting packets to the proxy based on session (Column 7, line 66 to Column 8, line 15), this does not deter from the fact that Gbadegesin discloses examining packets in order to determine whether the packet contains digital data pertaining to a certain protocol.

Additionally noted is that a packet is a set of data comprising fields, headers, payload, etc. The fields and headers contain data regarding addresses (source and destination), ports, and the like. Examining the packet in order to determine whether

the packet contains digital data pertaining to a certain protocol can be as simple as checking a port number, to see whether the packet has digital data (in this case the digital data in question could merely comprise the port number) pertaining to, e.g. HTTP. In other words, if the port number is 80, specifying HTTP, the packet contains digital data (the port number) pertaining to HTTP. Digital data contained in the packet could be a bit, a field, a header, the payload, the entire packet, etc. Such digital data could be any set of data from the first bit to the last bit of the packet; it is not required to be the payload of the packet.

Appellant also argues that the network gateway, and not the gNAT module, determines that the client's connection request matches the transparent proxy's commanded redirect. As seen in Column 8, lines 7-10, "When the module 106 detects any new network session, it determines whether there is a redirect that applies to the session. If the module 106 determines that there is a redirect for this session, the redirect is activated." From this it is clear that the gNAT module 106, of Gbadegesin determines that the client's connection request matches the transparent proxy's commanded redirect, the commanded redirect being described above. Also noted is that "the proxy application and the gNAT gateway may be physically located on different computers" (Column 6, lines 54-56), showing that the gNAT gateway may be a singular entity, physically separate from the proxy.

Appellant also argues that Gbadegesin does not disclose determining if the data in the packet conforms to a certain protocol. To further this argument, Appellant states that, even if Gbadegesin observes the packet and redirects the packet based on that

Art Unit: 2137

observation, this is not the same as examining the data within the packet. Once again, examining the packet is claimed, not examining the data within the packet. Regarding this argument, Appellant also states that, without examining the contents of the packet, there is no way to determine if the contents (data) has certain characteristics. This is further proof that the claimed examining the packet is not the same as examining the payload of the packet (such as checking for certain characteristics within the data). Further, Appellant states that Gbadegesin describes examining the packet (Page 14, second paragraph).

**B. Response to arguments regarding claims 4, 15-17, 41, 42, 47, 48, 56, 57, 64, 65, 71, and 72, rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Poier:**

Appellant argues that neither Poier nor Gbadegesin teaches determining whether a packet contains digital data that pertains to a certain protocol, processing the packet at the packet processor part if the packet is not found to contain digital data that would pertain to the certain protocol, and redirecting the packet to the application gateway part if the packet is found to contain digital data that pertains to the certain protocol. As shown above in section A of the response to arguments, Gbadegesin clearly teaches such limitations. Whether or not Poier teaches the same is deemed insignificant.

**C. Response to arguments regarding claims 5 and 6, rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Poier, further in view of TCP**

Art Unit: 2137

(or "Datagram"); claims 9, 10, and 32, rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of UDP; claims 11 and 13, rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Cheng; and claim 18, rejected under 35 U.S.C. 103(a) as being unpatentable over Gbadegesin in view of Leech:

Appellant argues that these claims are allowable because of their dependence on claim 1. Please refer to section A of the response to arguments for a clear discussion on how claim 1 is anticipated by Gbadegesin.

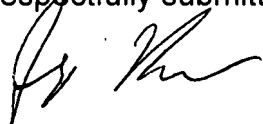
**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 2137

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



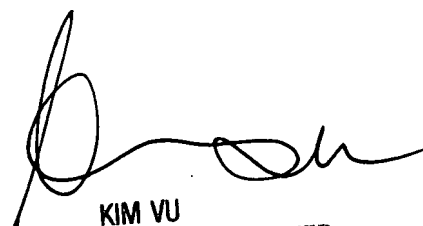
Jeff Popham

Conferees:

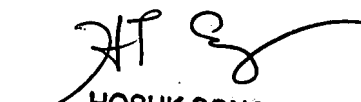
Kim Vu



Hosuk Song



KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100



HOSUK SONG  
PRIMARY EXAMINER